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16 JUN 1970

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MEMORANDUM FOR: Deputy Director of Central Intelligence

THROUGH : Executive Director-Comptroller
Director, Office of Planning, Programming
& Budgeting
Assistant Deputy Director for Intelligence

SUBJECT : Request for Approval to Contract for the
Fabrication of a Prototype Scan and
Search Photo Interpretation Station
with [redacted] at a
Cost of [redacted] from FY-1970 R&D Funds

DDR-Dupe

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1. This memorandum requests approval for the commitment of R&D funds for an NPIC contract. The specific request is stated in Paragraph 8.

2. During Fiscal Year 1969, NPIC contracted with the

[redacted] 5X1
[redacted] for the detailed design of a Scan and Search Photo Interpretation Station, under Contract [redacted] 25X1
Two subsequent changes-in-scope increased this to a total cost of [redacted] This design contract is currently nearing completion and will provide all the necessary technical and design data for subsequent fabrication of a prototype instrument. This memorandum requests funds to cover a follow-on contract for the fabrication of the prototype. 25X1

3. This photo interpretation station, designed specifically to accomplish the scan and search task, will consist of a high-resolution, rear-projection viewer combined with an integral light table. This instrument was conceived in direct response to the requirement to scan the large volumes of film forecast [redacted] It will permit the interpreter to quickly and simply load two rolls [redacted] 25X1
imagery (one from each camera) and then view either roll projected upon a 30" X 30" high-resolution screen. When an area 25X1

GROUP 1
Excluded from automatic
downgrading and
declassification

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requiring more detailed investigation appears on the screen, the interpreter can automatically advance the same imagery to the integral light table and view the film either monoscopically or in stereo with a microstereoscope. This approach, therefore, combines the advantages of rear-projection and direct viewing in a single system.

4. In our estimation, the primary advantage of the proposed photo interpretation station will probably lie in the area of operational effectiveness; i.e., diminution of the probability of overlooking an intelligence "find." In addition, there may be some increase in efficiency with respect to the scan and search operation because the instrument, as configured, comprises what we believe to be the most efficient combination possible of direct and rear-projection viewing. The greatly increased field of view provided by the rear-projection viewer portion of the station

[redacted] length of the roll can be projected on the screen at 4X magnification) is expected to provide the photo interpreter with the additional contextual data, often so important to the photo interpretation process. The light table and microstereoscope section of the station will then allow the photo interpreter to avail himself instantly of the higher contrast and magnification necessary for confirming and analyzing specific targets without burdening him with the tedious, time-consuming task of removing the film from the projector and reloading it on a light table. Utilizing the prototype, we will conduct operational testing and data collection to ascertain, as empirically as possible, the effectiveness of the instrument; results of these tests, along with a cost/effectiveness analysis, will form the basis for any decision as to whether or not to incorporate the station into the NPIC equipment inventory.

5. The proposed program requires seventeen months for the fabrication of the prototype instrument. The probability of success of this program is considered to be high because

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nearly all of the potential high-risk areas have been considered during the extensive design phase. The optical systems, the transport system, electronics, and controls have all been designed to provide the most efficient overall configuration in the smallest possible package, since space is a critical consideration at the Center. The screen selected for this development is one having the highest resolving power of any screen now commercially available. However, it is anticipated that a current NPIC research effort will, in the near future, provide a lenticular-type screen which will furnish much higher performance, both in resolution and contrast, than existing screens. The optical system design chosen offers better overall optical performance than that of any rear-projection system currently in existence. Other design features incorporated in this station are the result of recommendations made by the [redacted] under NPIC's Imagery Interpretation Research Program.

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6. [redacted] the selected contractor was chosen because it has a long history of proven success in developments of this type. During the design phase, [redacted] solicited bids for the optical system design from 13 domestic and foreign companies. The development objectives were so demanding that only three companies bid, with the [redacted] submitting the lowest bid [redacted] fixed price), as well as the most appealing technical proposal. [redacted] submitted a proposal at [redacted] [redacted] submitted one at [redacted] and both attached conditions to their proposals which strongly suggested the possibility of overruns. Consequently, [redacted] for the optics design; its performance on this task has been as excellent as it was on the design and fabrication of the optics for the High Precision Stereocomparator, also being built for NPIC [redacted] In view of this situation, [redacted] now proposes to subcontract the fabrication of the optics for this instrument to [redacted] on a fixed price basis. NPIC concurs with [redacted] selection in this matter.

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8. It is requested that approval be granted to negotiate a contract with [redacted] for the fabrication of a prototype Scan and Search Photo Interpretation Station at a cost not to exceed [redacted] from FY- 1970 R&D funds.

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ARTHUR C. LUNDAHL
Director

National Photographic Interpretation Center

Attachments: (2)

1. Proposal
2. Form 2420

CONCUR:

[redacted]
Assistant Deputy Director for Intelligence

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22 JUN 1970

Date

APPROVED:

787 E. K. White
Deputy Director of Central Intelligence
Executive Director

24 JUN 1970

Date

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